

Claims

- [c1] 1. A method for producing a hollow, elongated construction element comprising the following steps:
directing a first blank (1) through a furnace (2) and heating the blank (1) to a working temperature;
directing the first blank (1) between a pair of rollers (3, 4) having profiled surfaces thereby performing the first blank (1) into an intermediate product having a predetermined profile along a longitudinal extent thereof;
feeding the first blank (1) to a forging press having a number of cooperating die pads, and working the first blank (1) to form a substantially finished product having a cross section substantially in the form of a hat profile of predetermined height, width and material thickness along a length thereof;
placing in connection with the hat profiled first blank (1), a second blank (14) having essentially the same profile as the hat profile of the first blank (1) in the dividing plane of the cooperating die pads; and
joining the first (1) and the second blank (14) together, at least respective edges thereof, to form a composite hollow construction element (18).

- [c2] 2. The method as recited in claim 1, at least the first blank is forged vertically with respect to the principal plane in which the construction element is intended to be used.
- [c3] 3. The method as recited in claim 1, the forging operation comprises a first step in which a pair of first cooperating die pads form the material in the first blank such that it acquires a predetermined, varying height in a vertical plane along a longitudinal extent thereof and the first blank further acquires a basic principal shape in the same plane.
- [c4] 4. The method as recited in claim 3, the forging operation comprises a second step in which a pair of second cooperating die pads form the material in the first blank to a predetermined, varying thickness along a side surface, bottom surface and upper edge surface of the profile along a longitudinal extent thereof.
- [c5] 5. The method as recited in claim 4, the second step of the forging operation is repeated at least one time in successive die pads until the first blank has acquired a final shape.
- [c6] 6. The method as recited in claim 1, the second blank is preformed in a separate forging operation to have sub-

stantially the same profile as the hat profile of the first blank in the dividing plane of the die pads.

[c7] 7. The method as recited in claim 1, the first and the second blanks are formed in a joint forging operation in which the second blank is formed to the same profile as the hat profile of the first blank in the dividing plane of the die pads.

[c8] 8. The method as recited in claim 1, the first and the second blank are heated in a pair of separate induction furnaces and then placed between a pair of cooperating die pads in a press and joined together by forge welding.

[c9] 9. The method as recited in claim 1, the first and the second blank are simultaneously heated using heating means introduced between the first and second blank, which blanks are held between a pair of cooperating die pads in a press and the first and second blank are joined together by forge welding.

[c10] 10. The method as recited in claim 9, the heating is effected by means of one of an induction elements, an induction furnace, and a gas flame.

[c11] 11. The method as recited in claim 1, comprising: cutting flashes along the joined edges of the profile in the same press operation as for joining together the first

and second blank, the profile acquiring a predetermined varying width along a longitudinal extent thereof.

- [c12] 12. A hollow, elongated construction element comprising:
- a first section having a cross section substantially taking the form of a hat profile of a predetermined, varying width, height and material thickness along a length thereof; and
 - a second section having an essentially constant material thickness and being joined together with the first section along side surfaces of the hat profile.

- [c13] 13. The hollow, elongated construction element as recited in claim 12 wherein construction of the elongated construction element comprises the following steps:
- directing a first blank (1) through a furnace (2) and heating the blank (1) to a working temperature;
 - directing the first blank (1) between a pair of rollers (3, 4) having profiled surfaces thereby performing the first blank (1) into an intermediate product having a predetermined profile along a longitudinal extent thereof;
 - feeding the first blank (1) to a forging press having a number of cooperating die pads, and working the first blank (1) to form a substantially finished product having a cross section substantially in the form of a hat profile of predetermined height, width and material thickness

along a length thereof;
placing in connection with the hat profiled first blank (1),
a second blank (14) having essentially the same profile
as the hat profile of the first blank (1) in the dividing
plane of the cooperating die pads; and
joining the first (1) and the second blank (14) together,
at least respective edges thereof, to form a composite
hollow construction element (18).

[c14] 14. The hollow, elongated construction element as
recited in claim 12, wherein the construction element
is made from a microalloyed steel.

[c15] 15. The hollow, elongated construction element as re-
cited in claim 12, wherein the construction element con-
stitutes a front axle beam.

[c16] 16. The hollow, elongated construction element as re-
cited in claim 15, wherein a maximum material thickness
of the front axle beam is obtained in connection with
fastening points and regions which are to be subjected
to external forces and moments.

[c17] 17. The hollow, elongated construction element as re-
cited in claim 16, wherein the cross section of the front
axle beam has essentially the same outer contours in
both the vertical and horizontal planes as a convention-

ally forged, solid beam.